

Airborne Wide Area Imager for Wildfire Mapping and Detection, Phase II

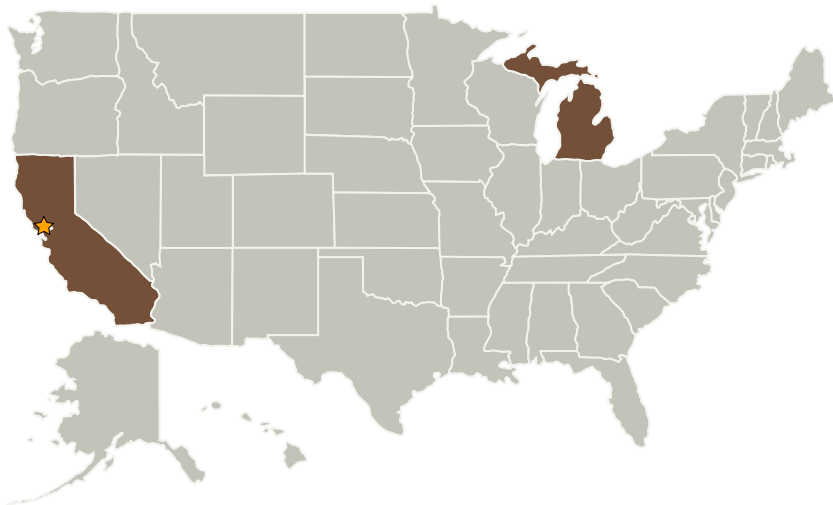
Completed Technology Project (2008 - 2010)



Project Introduction

An autonomous airborne imaging system for earth science research, disaster response, and fire detection is proposed. The primary goal is to improve information to researchers and operations personnel. By operating autonomously and with higher spatial resolution, the system will deliver a 3X to 4X reduction in operating costs compared to current systems. The system uses a two color Quantum Well Infrared Photo detector (QWIP) to improve the accuracy of energy release from wildfires, thereby improving our understanding of the carbon cycle. The system includes a multi-sensor step-stare imager, position and attitude sensor, data communications link, and a data processing system with; feature extraction (such as fire detection), image geo-coding, and image compression. The sensor head is an innovative design combining high resolution framing devices (cameras) with a step-stare scanning mirror. This configuration results in high spatial resolution imagery and wide area coverage. The design of the sensor head is flexible allowing for a variety of imagers including; visible and IR cameras and/or hyperspectral sensors. We envision several versions of the instrument, one weighing around 75 pounds and a smaller version weighing less than 15 pounds.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission
Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation
Research/Small Business Tech
Transfer

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Organizations Performing Work	Role	Type	Location
★ Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Xiomas Technologies	Supporting Organization	Industry	Ypsilanti, Michigan

Primary U.S. Work Locations	
California	Michigan

Project Transitions

**December 2008:** Project Start**June 2010:** Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.1 Detectors and Focal Planes